STN

09/903,047 HCAPLUS, USPATALL, ZINSPEC, JAPIO 9/18/02

=> d l20 1-5 abs,bib

L20 ANSWER 1 OF 5 USPATFULL
AB An epitaxial wafer has a base material made of sapphire-SiC single crystal or the like, a III nitride underfilm including at least Al element epitaxially grown on the base material and a GaN film, preferably having a thickness of 50 .ANG. or over, formed on the underfilm. In a fabricating a III nitride films on the epitaxial wafer, the oxidized surface layer of the GaN film is removed through etching process, and subsequently, the III nitride film is formed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 2002:112429 USPATFULL
TI III nitride epitaxial wafer and usage of the same
IN Shibata, Tomohiko, Kasugai City, JAPAN
Nakamura, Yukinori, Nagoya City, JAPAN
Tanaka, Mitsuhiro, Handa City, JAPAN
PA NGK Insulators, Ltd., Nagoya, JAPAN (non-U.S. corporation)
PI US 2002058162 A1 20020516
AI US 2001-962932 A1 20010925 (9)
PRAI JP 2000-313070 20001013
JP 2001-266804 20010904
DT Utility
FS APPLICATION
LREP BURR & BROWN, PO BOX 7068, SYRACUSE, NY, 13261-7068
CLMN Number of Claims: 10
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 376
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L20 ANSWER 2 OF 5 USPATFULL
AB The present invention provides a semiconductor device having a semiconductor multi-layer structure which includes at least an active layer having at least a quantum well, and the active layer further including at least a luminescent layer of In.sub.xAl.sub.yGa.sub.1-x-yN (0<x<1, 0.ltoreq.y.lteq.0.2), wherein a threshold mode gain of each of the at least quantum well is not more than 12 cm.sup.-1, and wherein a standard deviation of a microscopic fluctuation in a band gap energy of the at least luminescent layer is in the range of 75 meV to 200 meV.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 2002:53043 USPATFULL
TI Nitride based semiconductor light-emitting device
IN Yamaguchi, Atsushi, Tokyo, JAPAN
Kuramoto, Masaru, Tokyo, JAPAN
Nido, Masaaki, Tokyo, JAPAN
PA NEC Corporation (non-U.S. corporation)
PI US 2002030200 A1 20020314
AI US 2001-944186 A1 20010904 (9)
PRAI JP 2000-265787 20000901
DT Utility
FS APPLICATION
LREP YOUNG & THOMPSON, 745 SOUTH 23RD STREET 2ND FLOOR, ARLINGTON, VA, 22202
CLMN Number of Claims: 120
ECL Exemplary Claim: 1
DRWN 19 Drawing Page(s)
LN.CNT 2939
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L20 ANSWER 3 OF 5 USPATFULL
AB The present invention provides a semiconductor device comprising: a base

layer made of a gallium nitride-based material; a cladding layer extending over the base layer; and an active layer extending over the cladding layer, and the active layer including at least a photo-luminescent layer of In.sub.xAl.sub.yGa.sub.1--x-yN (0<x<1, 0.ltoreq.y.ltoreq.0.2), wherein a standard deviation .DELTA.x of a microscopic fluctuation in an indium composition of the photo-luminescent layer is not more than 0.067, or wherein a standard deviation .sigma. of a microscopic fluctuation in a band gap energy of the photo-luminescent layer is not more than 40 meV, or wherein a differential gain "dg/dn" of the active layer satisfies dg/dn.gtoreq.1.0.times.10.sup.-20 (m.sup.2).

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 2001:181165 USPATFULL
TI Nitride based semiconductor device and method of forming the same
IN Kuramoto, Masaru, Tokyo, Japan
Yamaguchi, Atsushi, Tokyo, Japan
PA NEC Corporation (non-U.S. corporation)
PI US 2001030316 A1 20011018
AI US 2001-810546 A1 20010319 (9)
PRAI JP 2000-76618 20000317
JP 2000-265803 20000901
DT Utility
FS APPLICATION
LREP YOUNG & THOMPSON, 745 SOUTH 23RD STREET 2ND FLOOR, ARLINGTON, VA, 22202
CLMN Number of Claims: 74
ECL Exemplary Claim: 1
DRWN 16 Drawing Page(s)
LN.CNT 1976
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L20 ANSWER 4 OF 5 USPATFULL
AB A process is disclosed for producing pn junctions and p-i-n junctions from group III nitride compound semiconductor materials. The process comprises growing of pn junctions and p-i-n junctions by hydride vapor phase epitaxy employing hydride of nitrogen (ammonia, hydrozine) as a source of nitrogen and halides of group III metal as a source of metal. Mg is used as acceptor impurity to form p-type III-V nitride layers. The preferred sources for Ga and Al are Ga and Al metals, respectively. The process is carried out in the temperature range from 900 to 1200.degree. C.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 2001:55845 USPATFULL
TI Process for producing III-V nitride pn junctions and p-i-n junctions
IN Nikolaev, Andrey E., St. Petersburg, Russian Federation
Melnik, Yuri V., St. Petersburg, Russian Federation
Vassilevski, Konstantin V., St. Petersburg, Russian Federation
Dmitriev, Vladimir A., Bethesda, MD, United States
PA Technology and Devices International, Inc., Gaithersburg, MD, United States (U.S. corporation)
PI US 6218269 B1 20010417
AI US 1998-195217 19981118 (9)
PRAI US 1997-66940P 19971118 (60)
DT Utility
FS Granted
EXNAM Primary Examiner: Wilczewski, Mary
LREP Beck, David G.McCutchen, Doyle, Brown & Enersen, L.L.P.
CLMN Number of Claims: 12
ECL Exemplary Claim: 1
DRWN 6 Drawing Figure(s); 4 Drawing Page(s)
LN.CNT 733

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L20 ANSWER 5 OF 5 USPATFULL

AB An epitaxial wafer for a light-emitting device has a double hetero-structure and includes a **single-crystal** substrate, a lower cladding layer of **AlGaN** grown on the substrate, an active layer grown on the lower cladding layer, the active layer having a two-phase structure comprised of a matrix of Al.sub.x Ga.sub.y In.sub.z N and crystallets of Al.sub.a Ga.sub.b In.sub.c N, and an upper cladding layer of AlGaN grown on the active layer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AN 1999:37477 USPATFULL

TI Epitaxial wafer device including an active layer having a two-phase structure and light-emitting device using the wafer

IN Udagawa, Takashi, Chichibu, Japan

PA Showa Denko K.K., Tokyo, Japan (non-U.S. corporation)

PI US 5886367 19990323

AI US 1997-906935 19970806 (8)

PRAI JP 1996-208486 19960807

DT Utility

FS Granted

EXNAM Primary Examiner: Guay, John

LREP Armstrong, Westerman, Hattori, McLeland & Naughton

CLMN Number of Claims: 8

ECL Exemplary Claim: 1

DRWN 4 Drawing Figure(s); 3 Drawing Page(s)

LN.CNT 711

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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(FILE 'HOME' ENTERED AT 08:52:27 ON 10 SEP 2002)

FILE 'HCAPLUS, USPATFULL, USPAT2, INSPEC, JAPIO' ENTERED AT 08:53:15 ON 10 SEP 2002

L1	79	S	(ALGAN OR ALUMINUM(W)GALLIUM(W)NITRIDE)(8A)(SINGLE(W)CRYSTAL
L2	90	S	(AL(W)GA(W)N OR ALGAN OR ALUMINUM(W)GALLIUM(W)NITRIDE)(8A)(SI
L3	1658	S	(GAN OR GA(W)N OR GALLIUM(W)NITRIDE)(8A)(SINGLE(2W)CRYSTAL? O
L4	160760	S	(REMOV? OR ETCH? OR MASK?)(8A)(SUBSTRATE)
L5	14	S	L2 AND L4
L6	233	S	L3 AND L4
L7	6564	S	(GA OR GALLIUM)(8A)(SOURCE)
L8	23270	S	(AL OR ALUMINUM OR ALUMINIUM)(8A)(SOURCE)
L9	51572	S	(FIRST OR PRIMARY)(8A)(SOURCE(2W)ZONE OR ZONE)
L10	45537	S	(SECOND?)(8A)(SOURCE(2W)ZONE OR ZONE)
L11	654082	S	(HEAT? OR ANNEAL?)(8A)(TEMPERATURE)
L12	6	S	(INTRODUC?)(8A)(HALIDE(W)REACTION(W)GAS)
L13	22	S	(TRANSPORT? OR MOV?)(8A)(FIRST(6A)HALIDE OR PRIMARY(6A)HALIDE
L14	25	S	(TRANSPORT? OR MOV?)(8A)(SECOND?(6A)HALIDE)
L15	4259991	S	(INTRODUC?(8A)NITROGEN OR N)
L16	2466	S	(PRODUC? OR FORM? OR GROW? OR MANUFACTUR?)(8A)(AL(W)GA(W)N OR
L17	1633116	S	(SUBSTRATE)
L18	1219	S	L16 AND L17
L19	995	S	(HVPE OR HALIDE(W)VAPOR(W)PHASE)
L20	5	S	L5 AND L7

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